

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicants: Michael S. Beck, et al.  
Serial No.: 10/784,739  
Filing Date: February 23, 2004  
For: System and Method for Actively  
Controlling Traction in an Articulated  
Vehicle

Group Art Unit: 3616  
Examiner: Eric D. Culbreth  
Atty. Dkt. No.: 2063.007600  
Client Ref. No.: VS-00620  
Confirmation No.: 2452

**REPLY BRIEF**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Applicants hereby submit this Reply Brief to the Board of Patent Appeals and Interferences in response to the Examiner's Answer dated December 8, 2008. It is believed that no fee is due; however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be required for any reason, the Commissioner is authorized to deduct said fees from Williams, Morgan & Amerson, P.C. Deposit Account No. 50-0786/2063.007600.

**I. HROVAT TEACHES AN ON-ROAD SUSPENSION,  
BRANDSTADTER TEACHES AN OFF-ROAD SUSPENSION**

The Office alleges some confusion in Applicants' briefing over whether Hrovat and Brandstadter teach on-road or off-road suspensions:

The appellant argues on pages 12-13 of the Appeal Brief that Brandstadter teaches away from using an on-road active suspension in off-road vehicles (actually, the appellant's remarks are confusing, stating in the lower half of page 12 that Hrovat is an on-road vehicle and that Brandstadter is for an off-road vehicle, but then stating in the first full paragraph of page 13 that Hrovat is an off-road vehicle).

(Examiner's Answer, p. 10) Applicants disagree, but rather than quibble over whether there is some sort of confusion, hereby clarifies the record. Hrovat teaches an on-road suspension system. Brandstadter teaches an off-road suspension system.

## **II. THE ON-ROAD/OFF-ROAD DISTINCTION IS CONTROLLING BECAUSE IT MEANS HROVAT AND BRANDSTADTER CANNOT BE COMBINED**

The Office believes that the on-road/off-road distinction is not probative:

At any rate, this [distinction] is not persuasive because a combination of teachings is not a bodily incorporation of parts (i.e., the features of Brandstadter in the combination would be adapted for the intended use or terrain to be encountered), because the terms "on-road" and "off-road" in themselves do not patentably distinguish features (i.e., off-road vehicles such as Brandstadter's tank frequently travel on the road, and cars such as Hrovat's frequently travel off the road at beaches, events where one parks on the grass, hiking in wilderness, etc.), and because in the combination of teachings Hrovat's vehicle in fact could be/would be converted to encounter off-road terrain (note Brandstadter, column 1, lines 15-20 where off-road systems use passive suspension systems; column 1, lines 38-41 where active systems are used for road vehicles; and column 3, lines 26-35 where the object of Brandstadter's invention is to use an active system on an off-road vehicle; in the combination Hrovat would be improved for off road conditions). Contrary to applicant's on page 13, Brandstadter does not "teach away" from using on-road active suspension systems in off-road vehicles such as Hrovat, but rather teaches improving an off-road suspension system by making it an active suspension system, in which case Hrovat's suspension system would be improved for off-road conditions

(Examiner's Answer, p. 10) So, per the Office, the distinction is irrelevant because tanks sometimes travel on roads and cars sometimes travel off roads. This is akin to saying there is no real difference between the avionics of the SR-71 and the Space Shuttle because the SR-71 can travel outside the Earth's atmosphere and the Space Shuttle travels through the atmosphere on launch and re-entry.

Such an argument is just wrong on its face. Even people illiterate in the art understand that while tanks *can* travel on roads, they are designed to travel *off* roads and that off-road is a very different thing from on-road. People illiterate in the art also understand that while one *can* drive a car off road, it is not designed for that—which is why many cars that actually do travel on

beaches need to be towed out of them. The root question is not the kind of environment in which the suspension can be used, but rather for what kind of environment it is designed.

But the bigger reason the argument is wrong is because the evidence of record contradicts it. Brandstadter affirmatively states that on-road suspension systems are not suitable for off-road applications. Applicants again quote the relevant passage from Brandstadter:

*In a road vehicle, the dynamic component is primarily due to the acceleration, braking, and cornering inertial forces acting on the vehicle. These forces are smaller than the static force, and the aforescribed parallel arrangement results in a substantial reduction in the energy required to stabilize the vehicle in reaction to these forces.*

*In an off-road vehicle, however, the dynamic component is primarily due to terrain disturbances producing large road wheel motions. The forces associated with these large motions are greater than the static force and the parallel arrangement results in an increase in the energy required to isolate the vehicle in reaction to these motions. Thus, the increased size, weight, and cost of the parallel arrangement is not offset by a comparable reduction in the energy requirements under off-road conditions and, **therefore, this type of system is not applicable to off-road vehicles generally and to combat vehicles specifically.***

(col. 2, lines 6-24; emphasis added)

There is no evidence of record that contravenes this teaching in Brandstadter. As is reestablished below, through this passage, Brandstadter teaches away from Hrovat and from Hrovat's application against Applicants' claims. Thus, under applicable law and policy, Hrovat and Brandstadter cannot properly be combined on the *evidence* of record. *In re Fine*, 5 U.S.P.Q.2d (BNA) 1596, 1599 (Fed. Cir. 1988); *In re Gordon*, 221 U.S.P.Q. (BNA) 1125, 1127 (Fed. Cir. 1984); M.P.E.P. §2145 X D 2.

### III. THE OFFICE MISCONSTRUES APPLICANTS' POSITION

The Office misconstrues Applicants' position with respect to the improper combinability of Hrovat and Brandstadter:

At any rate, this [distinction] is not persuasive *because a combination of teachings is not a bodily incorporation of parts* (i.e., the features of Brandstadter in the combination would be adapted for the intended use or terrain to be encountered), because

the terms "on-road" and "off-road" in themselves do not patentably distinguish features...

(Examiner's Answer, p. 10) Applicants' position in no way suggests or asserts that Hrovat and Brandstadter are improperly combined because there can be no "bodily incorporation of parts". Indeed, whether there can be "bodily incorporation of parts is irrelevant to the decision. Applicants' position is that they are not properly combinable because of their respective teachings. More particularly, because Brandstadter teaches away from Hrovat.

#### **IV. THE MISCONSTRUES APPLICANTS' POSITION ON TEACHING AWAY**

The Office misconstrues Applicants' position on Brandstadter teaching away from Hrovat. The Office alleges:

On pages 14-15 of the Appeal Brief, the Appellant argues that Brandstadter, column 3, lines 5-25 teaches away from using any on-road active suspension systems off-road (actually, this is reversed; what the Appellant seems to be arguing is that Brandstadter's off-road system cannot be used on an on-road vehicle like Hrovat).

(Examiner's Answer, p. 11) Once again, rather than quibble over what was said in the "Appeal Brief" or even what Applicants' "seemed to be arguing", Applicants clarify exactly what it is they are arguing—Brandstadter teaches away from using on-road suspension systems such as those taught by Hrovat.

#### **V. BRANDSTADTER TEACHES AWAY FROM HROVAT**

The Office disputes Applicants' arguments that Brandstadter teaches away from using on-road suspension systems off-road. The Office first states:

Contrary to applicant's on page 13, Brandstadter does not "teach away" from using on-road active suspension systems in off-road vehicles such as Hrovat, but rather teaches improving an off-road suspension system by making it an active suspension system, in which case Hrovat's suspension system would be improved for off-road conditions.

(Examiner's Answer, p. 11) This argument immediately raises the question of why one would need to improve Hrovat's suspension system (or any on-road suspension system) for off road conditions if it were already suitable. The Office subsequently states its position more fully:

On pages 14-15 of the Appeal Brief, the Appellant argues that Brandstadter, column 3, lines 5-25 teaches away from using any on-road active suspension systems off-road (actually, this is reversed; what the Appellant seems to be arguing is that Brandstadter's off-road system cannot be used on an on-road vehicle like Hrovat). However, this is not persuasive because of Brandstadter, column 3, lines 26-35 cited above, where he teaches adapting an active suspension for off-road use is the very object of his invention. Brandstadter's disclosure of using active suspensions, previously used with on-road suspensions, on an off-road suspension at column 3, lines 26-35 and column 1, lines 38-41 above hence provide support for the examiner's statements cited on page 15 of the Appeal Brief (that the skilled artisan would understand the conditions for which a suspension arrangement is suitable and hence design the suspension for the conditions to be encountered, and that the mechanics of on-road and off-road vehicles are often the same but adapted for particular conditions).

(Examiner's Answer, p. 11)

As a preliminary matter, the Office still has not dealt adequately with Brandstadter's express teaching the on-road suspension systems are unsuitable for off-road vehicles:

*In a road vehicle, the dynamic component is primarily due to the acceleration, braking, and cornering inertial forces acting on the vehicle. These forces are smaller than the static force, and the aforescribed parallel arrangement results in a substantial reduction in the energy required to stabilize the vehicle in reaction to these forces.*

*In an off-road vehicle, however, the dynamic component is primarily due to terrain disturbances producing large road wheel motions. The forces associated with these large motions are greater than the static force and the parallel arrangement results in an increase in the energy required to isolate the vehicle in reaction to these motions. Thus, the increased size, weight, and cost of the parallel arrangement is not offset by a comparable reduction in the energy requirements under off-road conditions and, **therefore, this type of system is not applicable to off-road vehicles generally and to combat vehicles specifically.***

(col. 2, lines 6-24; emphasis added) The Office anchors its position on col. 3, lines 26-35 and col. 1, lines 38-41, neither of which do anything to rebut Applicants' construction. The first passage only states an objective of the invention regarding the particular off-road suspension system it is disclosing:

*Another feature of the present invention is to provide an active hydropneumatic suspension system **for off-road vehicles,***

wherein a sprung mass is supported relative to a movable unsprung mass and wherein the system's energy requirements are reduced, and in particular, wherein the sprung mass is the hull of a heavy combat vehicles, supported by such an active hydropneumatic system whose energy requirement is substantially less than the energy absorbed by the dampers of known passive suspension systems.

(col. 3, lines 26-35, emphasis added) Not only is this passage expressly limited to an off-road suspension system, there is no evidence of record that “active hydropneumatic suspension systems” are necessarily “on-road” suspension systems. The second passage avails the Office no better:

Numerous concepts for semi-active and active suspension systems whose object is to improve the ride and the stability of road and rail vehicles have been disclosed in United States Patents.

(col. 1, lines 38-41) This statement is so general it has no impact on the current question.

Thus, regardless of whatever arguments the Office may gin up over the disclosure of Brandstadter, the *evidence* of record regarding his disclosure is that Brandstadter:

- (1) expressly states that on-road suspension systems are unsuitable for use in off-road vehicles;
- (2) seeks to disclose “an active hydropneumatic suspension system for off-road vehicles”; and
- (3) asserts that a lot of semi-active and active suspension systems have been proposed for road and rail vehicles.

The sum of these three statements, though, is that Brandstadter teaches that on-road suspension systems are unsuitable for off-road vehicles. Brandstadter therefore teaches away from Hrovat.

## **VI. CONCLUSION**

The Office continues to frame the issue of whether Brandstadter and Hrovat can be combined in terms of whether the two references both disclose an active suspension system. In the course of doing so, the Office tries to read out of, or at least minimize, the passage in Brandstadter that prohibits exactly the kind of combination the Office seeks to make. Whatever else the Office may say, argue, or reason, the following facts remain:

- (1) Hrovat teaches a system of a kind that Brandstadter describes as an “on-road” suspension system;
- (2) Brandstadter teaches an off-road suspension system; and
- (3) Brandstadter affirmatively states that on-road suspension systems are not suitable for off-road vehicles.

Regardless of whether the suspension systems of Hrovat and Brandstadter are both active systems, those facts remain.

Accordingly, under applicable law and policy, Hrovat and Brandstadter cannot properly be combined on the *evidence* of record. *In re Fine*, 5 U.S.P.Q.2d (BNA) 1596, 1599 (Fed. Cir. 1988); *In re Gordon*, 221 U.S.P.Q. (BNA) 1125, 1127 (Fed. Cir. 1984); M.P.E.P. §2145 X D 2. And, since each of the rejections relies on the combination of Brandstadter and Hrovat, they all fail. Applicants therefore pray that all rejections be REVERSED and the claims allowed to issue.

The Examiner is invited to contact the undersigned attorneyat (713) 934-4053 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,

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